

# Hurricane Rita

## National Oceanic and Atmospheric Administration

### National Climatic Data Center

*Note: Data in this report are compiled from preliminary statistics*

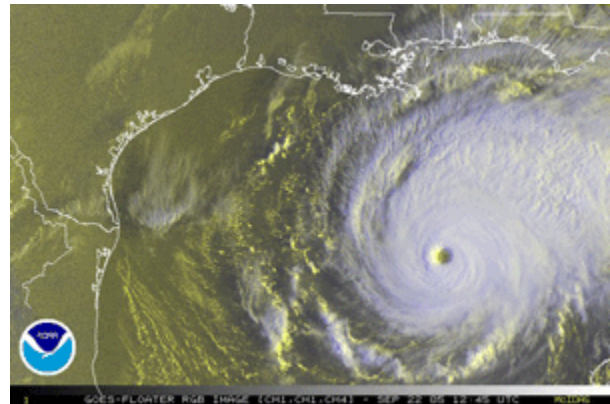
*Updated 22 September 2005*

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## Overview

### [Satellite Animation of Rita](#)

Following less than a month after Hurricane Katrina devastated large parts of the central Gulf Coast region, Hurricane Rita was the second hurricane of the season to reach Category 5 status (on the Saffir-Simpson scale) in the Gulf of Mexico. This marked the first time on record that two hurricanes reached Category 5 strength in the Gulf of Mexico in the same season. Additionally, it was only the third time that two Category 5 storms formed in the Atlantic Basin in the same year.



### [Satellite Animation of Rita](#)

One of the strongest storms on record for the Atlantic Basin, peak sustained winds reached 175 mph as the storm tracked west and northwest through the Gulf. Weakening occurred during the 36 hours prior to landfall but Rita brought hurricane strength winds more than 150 miles inland and caused significant damage along the coast. Hurricane Rita made landfall with windspeeds of 120 mph along the Texas/Louisiana border early on September 24th.

At its peak intensity, Rita's minimum central pressure reached 897 mb. Only two other storms in recorded history have had lower pressures in the Atlantic:

- [Hurricane Gilbert](#), Cozumel, Mexico, September 14th 1988, 888mb, category 5, near 185 mph
- [The Labor Day Hurricane](#), Florida Keys, September 2, 1935, 892 mb, Category 5, approaching 200 mph

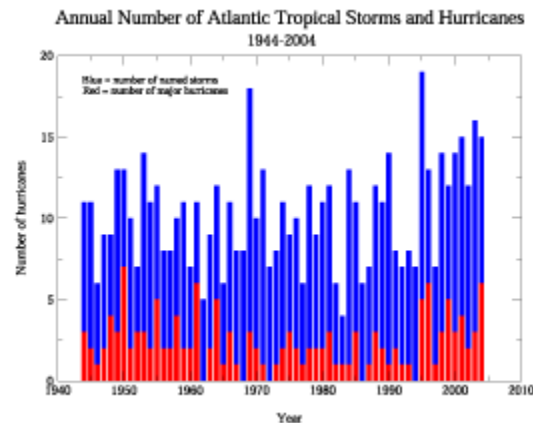
Although the region was well-prepared for the storm, the devastation across the Louisiana/Texas border region was widespread. While there are currently few reports of injuries or deaths as a direct result of the storm, unlike the large loss of life from [Hurricane Katrina](#), a massive evacuation effort likely saved much loss of life.

The [most deadly hurricane to strike the U.S.](#) made landfall in Galveston, Texas on September 8, 1900. This was also the greatest natural disaster ever to strike the U.S., claiming more than 8000 lives when the storm surge caught the residents of this island city by surprise.

So far in 2005 (as of September 28th), 17 named storms have formed, with 9 of those becoming hurricanes and 5 of those ([Dennis](#), [Emily](#), [Katrina](#), [Maria](#) and [Rita](#)) designated as '[major](#)'.

### [Annual Number of Atlantic Tropical Storms and Hurricanes 1944-2004](#)

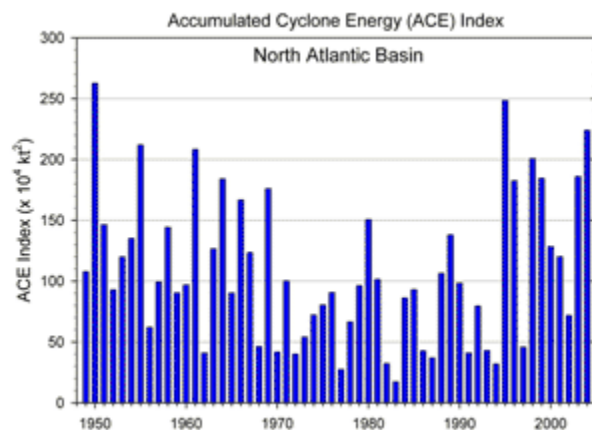
As shown in the figures to the right, tropical cyclone activity in the Atlantic basin has been above normal since 1995. This has been largely in response to the active phase of the [multi-decadal signal](#). The average number of named storms since 1995 has been 13, compared to 8.6 during the preceding 25 years during which time the multi-decadal signal was in an inactive phase. An average of 7.7 hurricanes and 3.6 major hurricanes since 1995 compares to 5 hurricanes and 1.5 major hurricanes from 1970-1994.



### [Annual Number of Atlantic Tropical Storms and Hurricanes 1944-2004](#)

### [North Atlantic Basin Accumulated Cyclone Energy \(ACE\) Index](#)

Characteristics of an active multi-decadal signal in the Atlantic include: warmer SSTs in the tropical Atlantic region, an amplified sub-tropical ridge at upper levels across the central and eastern North Atlantic, reduced vertical wind shear in the deep tropics over the central North Atlantic, and an African Easterly Jet (AEJ) that is favorable for promoting the development and intensification of tropical disturbances moving westward off the coast of Africa. Recent studies also indicate that in addition to this multi-decadal oscillation the destructive power of hurricanes has generally increased since the mid-1970s, when the period of the most rapid increase in global ocean and land temperatures began.



### [North Atlantic Basin Accumulated Cyclone Energy \(ACE\) Index](#)

However, it is important to note that increased tropical cyclone activity does not necessarily translate into an increase in the number of landfalling tropical storms or hurricanes. [Six of the past 11 years have had one or fewer landfalling hurricanes along the Gulf Coast](#), and there is no long-term trend in the number of landfalling hurricanes since 1900.

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## Meteorology

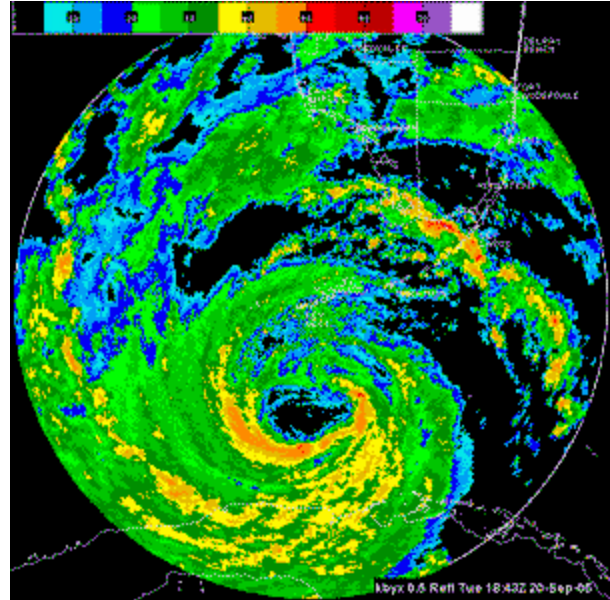
The following is a synopsis of the conditions that produced historic Hurricane Rita, as well as some information of [rain and wind records](#) and a very preliminary description of the [major impacts](#). Note that reports are constantly being updated as a result of new information, and this page will be updated during the next month as new reports and data become available.

Tropical Storm Rita developed on September 18th from a tropical depression that formed early the same day. The storm increased in intensity over the next 48 hours, becoming a [category 1 hurricane](#) on the 20th and a category 2 hurricane later that afternoon. Tracking through the Florida Straits, Hurricane Rita neared the Florida Keys on the 20th, causing sustained tropical storm force winds on Key West with gusts of up to 76 mph (66 knots).



[Track map](#) courtesy of [CIMSS/SSEC](#)

Rapidly intensifying, Hurricane Rita tracked westward into the Gulf of Mexico and by the afternoon of the 21st, Rita had reached category 5 strength on the Saffir-Simpson scale, with winds of 165 mph. Continuing to intensify to reach windspeeds of 175 mph, the minimum central pressure of the storm dropped to 897 mb, the third lowest on record for the Atlantic Basin, after Hurricane Gilbert in 1988 (888 mb), and the 1935 Labor Day Hurricane (892 mb). 2005 marks the first time in recorded history that two hurricanes (Katrina and Rita) have reached category 5 strength in the Gulf of Mexico in a single season.



[Radar-estimated rainfall as Rita moves past the Florida Keys](#)

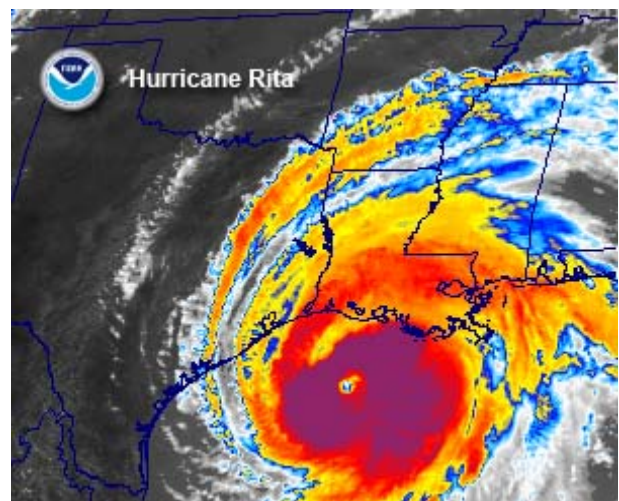
Weakening during the afternoon of the 22nd, due to an eyewall replacement cycle and perhaps some influence of slightly cooler sea-surface temperatures, Rita's intensity dipped to a surface windspeed of 145 mph (125 kts) and continued to weaken gradually over the next 36 hours prior to landfall. Rita tracked west-northwest during the 23rd and [made landfall at the Texas/Louisiana border](#) early on the 24th, at category 3 strength with sustained winds of 120 mph.



[Satellite image of Rita near its peak intensity](#)

Hurricane force winds were sustained more than 150 miles inland and tropical storm force winds were felt as far north as the LA-TX-AR border. Rita's pressure as it came ashore was 937 mb.

[Rainfall amounts](#) for Texas, Louisiana and along the Gulf are described below along with other [impacts of the storms](#).



[Rita Making Landfall](#)



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## Rain, wind, storm surge

### Florida and the Keys

Sustained tropical storm force winds and gusts of around 76 mph were recorded on Key West as Rita tracked past the islands.

### Gulf Coast

- Rainfall from Rita's outer bands began affecting the Gulf coast well before landfall. As Rita tracked westward through the Gulf, parts of the Gulf coast that had received heavy rain and wind from Katrina were again affected by Rita's outer bands.
- As Rita came ashore on September 24th, rainfall exceeded [6 inches across a large area of the Texas and Louisiana coast](#).
- Windspeeds over 120 mph were recorded at landfall near Sabine Pass, TX.
- The central pressure at landfall was 937 mb. Rita also reached a minimum central pressure of 897 mb at its peak, ranking 3rd lowest on record for all Atlantic basin hurricanes.
- Storm surge topped 8 feet in New Orleans, LA breaching the provisionally-repaired levees damaged by Hurricane Katrina. Some flooding occurred in the city as a result, though significantly less extensive and severe than several weeks prior. Storm surge at landfall in Texas/Louisiana reached 15 feet, flooding coastal towns across the border region.

### Inland

As the storm moved inland and weakened to a tropical storm later on the 24th, rainfall became the primary impact. The storm's forward speed diminished on the 25th and as the storm slowed, rainfall amounts exceeded 3 inches across a large area of Northeastern Texas, parts of Arkansas, Mississippi, Alabama and Louisiana. As a result, localized flooding occurred. Rain bands from Rita also [produced tornadoes](#) causing damage in parts of Louisiana, Arkansas and Mississippi, and then further east into [Alabama on the 25th](#).

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## Impacts

### Loss of Life

Texas and Louisiana officials evacuated over 3 million residents and therefore sharply reduced the number of people at risk from the storm surge and wind-related damage. Few deaths or injuries have been reported for Rita. No deaths were reported from southern Florida.

### Flooding

Extensive flooding occurred along the Texas/Louisiana coastal region as a result of Rita's September 24th landfall. A storm surge of around 15 feet flooded Louisiana parishes including Cameron, Jefferson Davis, Terrebonne and Vermilion trapping some remaining residents in these areas. Some floodwaters began to recede relatively quickly after the hurricane moved northwards revealing the extent of damage in the coastal neighborhoods. Some localized flooding occurred in southern Florida as Rita tracked through the Straits of Florida on the 20th, but damage and flooding was light. Some renewed flooding occurred in New Orleans as an 8-foot storm surge overtopped the provisionally-repaired levees, originally damaged during Hurricane Katrina.

### **Oil Industry**

Two refineries in Port Arthur, TX were damaged by Hurricane Rita, though the storm missed the larger oil-refining region nearer Houston and Galveston.

### **Power Outages**

Over one million people lost power as a result of the storm in the Gulf states and most remained without power for several days. Some of Louisiana's residents still had not had power restored from Hurricane Katrina when Hurricane Rita also impacted the state. Power was lost to only 100,000 or so customers in southern Florida from the early track of Rita, and most power was restored within hours.

### **Cost**

Estimates for insured damages for Hurricane Rita are still extremely preliminary and properly assessing losses will take weeks or months. However, the cost of Rita will not even closely approximate that of Katrina and will likely not approach that of Andrew in 1992 - the second costliest U.S.-landfalling hurricane -with losses over \$20 billion. Early estimates of Rita's insured cost is around \$4-5 billion.

### **Travel**

Many highways and minor roads were impassable after the hurricane along the Gulf coast near the Louisiana/Texas border and were impossible to quickly reopen. Many residents were trapped for over 10 hours in traffic jams as a result of the massive evacuation order. However, Highway 1 in FL was passable within hours of Rita's glancing blow on the 20th.

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### **Useful Links**

- [NCDC's Tropical Cyclone Overview Page](#)
- [Space Science and Engineering Center Hurricane Katrina Page](#)
- [The National Weather Service](#) (click on the map to take you to local homepages)
- [NOAA's National Hurricane Center](#)

- [NOAA's Climate Prediction Center](#)

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## Contact Information

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### Citing this Article

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